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ANALYTICAL ABSTRACTS OF CURRENT LITERATURE.

Ein typisches Fjordthal. von Erich von Drygalski. z. Z. GRÖNLAND.
14 pp.

Dr. Drygalski describes in detail a valley on the west coast of Greenland, one peculiarity of which is that there are three considerable depressions along its axis. These are occupied by lakes, some of which certainly, and all of which probably, have rock basins. Another peculiarity of the valley is that it crosses a narrow highland between two fjords. One end lies at the sea level, the other 211 m. above it, the slight drainage through the valley having a fall of this amount at the end of the valley. This latter point is nearly 100 m. below the divide in the valley, from which drainage flows in opposite directions. The valley is about $5\frac{1}{2}$ km. long, about 1 km. wide, and has an average depth of about 336 m. While the valley is well above sea level, and therefore no fjord, it is pointed out that, with a relatively higher sea, it would become a fairly typical fjord. In the judgment of the author, the situation is such as to preclude the idea that the valley is a river valley, or that it is a river valley modified by ice action, and the author is "very much inclined to extend this conclusion to the fjords" he has seen. Dr. Drygalski advocates the view that this valley owes its origin primarily to the weathering of the gneiss in which it lies, and suggests that joint-planes, by determining the position of greatest weathering, determined also the position of the valley. Subsequently, after the valley had come into existence by weathering, the ice removed the weathered products, and an undetermined depth of solid rock below. The author leaves it to be understood that this is, in his judgment, a principal, if not the principal method by which the fjords with which he is familiar have originated.

R. D. S.

A Preliminary Report on the Cretaceous and Tertiary Formations of New Jersey. By WILLIAM BULLOCK CLARK, Annual Report of the State Geologist of New Jersey, 1892.

This report presents the results of investigation conducted by Professor Clark and his assistants during the year 1892 upon the coastal plain formations of New Jersey. The report, with a new geological map, covers the area of the U. S. Geological Survey atlas sheets of New Brunswick and Sandy

Hook. The text contains an historical sketch in which the work of past investigators is briefly cited, and reference made to the various views upon the classification and correlation of the several formations. A second chapter is devoted to a consideration of the physical features of the coastal plain, following which is an extended statement in regard to the stratigraphical characteristics of the formations found there. Although an attempt is made to make the classification of the deposits coincide, so far as it is possible, with the investigations of the late Professor Cook, yet some changes of importance are considered to be necessary. The name Raritan formation is proposed in place of the wholly inadequate term Plastic Clay, and the Upper Marl bed, which is in part Cretaceous and in part Eocene, is divided into Manasquan Marl and Shark River Marl respectively. The division of Yellow Sand proposed by Professor Cook is not held to be an independent formation, but is included under the Manasquan Marl. The Miocene is considered to be extensively developed in New Jersey. Although fossils have been found at only a few points, they are thought to be sufficient in number to indicate a series of deposits several hundred feet in thickness and many square miles in surface exposure.

In summing up his statements in regard to the relation of the several formations, Professor Clark says, "the deposits of the coastal series of New Jersey show complete conformity from the bottom of the Raritan formation to the top of the Upper Marl bed, while no wide-reaching dislocations of the strata have been observed at any point. The strike follows a nearly continuous trend of N. 50 E., while the dip is twenty-five to thirty feet in the mile to the southeast. Overlying the Upper Marl bed unconformably is the Miocene, which possesses the same general structural and stratigraphical features as the earlier members of the series."

The origin of greensand, which characterizes so many of the coastal plain formations of New Jersey, is fully considered, the results by Professors Murray and Renard, of the Challenger Expedition, being given with much fullness. The geological distribution of greensand is briefly reviewed, and the character of the New Jersey deposits more fully considered. Three colored plates are reproduced from the Challenger Expedition report on Deep-Sea Deposits, to illustrate the mode of formation of glauconite.

R. D. S.

The Pleistocene Rock Gorges of Northwestern Illinois. By OSCAR H. HERSHEY. *American Geologist*, November, 1893.

The object of this paper is to ascertain the length of the "deglaciation interval and perhaps interglacial epoch." The ice of the maximum period of glaciation affected this region but slightly. In some cases the glacial sand and gravels were deposited in ridges transverse to the streams' courses, thus damming the streams and producing small lakes. Sometimes the barriers were so

high that the course of drainage was altered. The new valleys were cut in Galena limestone. The amount of cutting in the limestone since maximum glaciation is about equal to that in the newer drift in the vicinity of Lake Michigan. The later work has been going on, it is believed, about 7000 years. It is estimated that erosion in the limestone of northwestern Illinois took place one tenth as fast as in the drift. On this basis 70,000 years have been required for the erosion accomplished in northwestern Illinois since the maximum period of glaciation. Long after the withdrawal of the maximum ice-sheet, a mantle of loess was spread over northwestern Illinois. The writer thinks that something like four fifths of the erosion accomplished since the withdrawal of the maximum ice-sheet was accomplished before the deposition of the loess. Fifty thousand years are considered a minimum, and perhaps twice that time not too great an allowance of time, for the erosion that took place between the time of the formation of the drift sheet in northwestern Illinois and the deposition of the loess.

J. A. B.

Notes on the Sea-Dikes of the Netherlands. By PROF. J. C. SMOCK.
(Annual Report of the State Geologist of New Jersey, 1892, pp. 315-329).

These notes are descriptive of the dikes at the Helder and at Petten in North Holland, and at West Kappele in Zealand. The breaks in the coastal dune ranges are occupied by them. The whole sea-front is protected by a system of jetties also. They are built on the strand and in front of the dikes—and check the currents which carry away the beach sands and tend to undermine the dune hills at these localities. The dikes are essentially enormously thick walls of sand whose outer slope is at a low angle, and is faced with stone and further protected by rip-rap and by piling. The descriptive notes of the construction are illustrated with plans and vertical cross-sections.

The application of a modified system of sea-dikes for the protection of the bluffs at Long Branch, New Jersey, follows. The reclamation of the tidal lands of the state is referred to, and the reclamation of the low-lands of Holland affords an instructive example.

J. C. S.